

IN THE CLAIMS

Please amend the claims as follows:

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1. (Currently amended) A liquid crystal device comprising:
a first cell wall and a second cell wall enclosing a layer of liquid crystal material;
electrodes for applying an electric field across at least some of said liquid crystal material; and
a surface alignment structure integrated onto an inner surface of said first cell wall providing a desired alignment to molecules of said liquid crystal material,
wherein said surface alignment structure comprises one of a random or pseudorandom two dimensional array of upstanding features that are at least one of shaped and orientated to produce said desired alignment.

2. (Previously amended) A device as claimed in claim 1, wherein the geometry and spacing of the features is such as to cause the liquid crystal material to adopt at least one of a locally planar or tilted planar alignment.

3. (Original) A device as claimed in claim 2, wherein the inner surface of the second cell wall is treated to produce a locally homeotropic alignment of the liquid crystal material, whereby the cell functions in a hybrid aligned nematic mode.

4. (Previously amended) A device as claimed in claim 2, wherein the inner surface of the second cell wall is treated to produce at least one of a locally planar or tilted planar alignment of the liquid crystal material substantially at right angles to the alignment direction on the first cell wall, whereby the cell functions in a TN mode.

5. (Original) A device as claimed in claim 1, wherein the geometry and spacing of the features is such as to cause the liquid crystal material to adopt a locally homeotropic alignment.

6. (Previously amended) A device as claimed in claim 1, wherein the features are at least one of shaped and orientated so as to produce one of a substantially uniform planar or tilted planar alignment of the liquid crystal director in a single azimuthal direction.

7. (Previously amended) A device as claimed in claim 1, wherein the features are at least one of shaped and orientated so as to produce one of a substantially uniform planar or tilted planar alignment of the liquid crystal director in a plurality of azimuthal directions.

8. (Original) A device as claimed in claim 1, wherein the features comprise posts which are tilted with respect to the normal to the plane of the first cell wall.

9. (Original) A device as claimed in claim 1, further including an analyser and a polariser mounted on the cell walls.

10. (Previously amended) A device as claimed in claim 1, wherein the features are at least one of different height, different shape, different tilt and different orientation in different regions of the device.

11. (Previously amended) A device as claimed in claim 1, wherein said features comprise posts, and wherein a tilt angle and orientation of the posts are uniform throughout the device.

12. (Previously amended) A cell wall for use in manufacturing a liquid crystal device according to claim 1, comprising a wall and a surface alignment

structure on one surface thereof for aligning the director of a liquid crystal material, said surface alignment structure comprising one of a random or pseudorandom two dimensional array of upstanding features which are at least one of shaped and orientated to produce the desired alignment.

13. Cancelled

14. Cancelled

15. (Currently amended) A method of manufacturing a liquid crystal device, comprising securing a first cell wall ~~in accordance with claim 11~~ to a second cell wall, at least one of the cell walls having an electrode structure thereon, so as to produce a cell having spaced apart cell walls the inner surfaces of which each carry at least one electrode structure; filling the cell with a liquid crystal material, and sealing the cell, wherein said first cell wall comprises a wall and a surface alignment structure on one surface thereof for aligning the director of a liquid crystal material, said surface alignment structure comprising one of a random or pseudorandom two dimensional array of upstanding features which are at least one of shaped and orientated to produce the desired alignment.

16. (Original) A device as claimed in claim 2, wherein the inner surface of the second cell wall is treated to produce at least one of a locally planar or tilted planar alignment of the liquid crystal material substantially at right angles to the alignment direction on the first cell wall, whereby the cell functions in an STN mode.

17. Cancelled

18. (Currently amended) A liquid crystal device comprising:
a first cell wall and a second cell wall enclosing a layer of liquid crystal material;

electrodes for applying an electric field across at least some of said liquid crystal material;
a surface alignment structure integrated onto an inner surface of said first cell wall providing a desired alignment to molecules of said liquid crystal material,
wherein said surface alignment structure comprises one of a random or pseudorandom two dimensional array of upstanding features that are at least one of shaped and orientated to produce said desired alignment, and
wherein said array of upstanding features is not treated with or formed from a material which will induce local homeotropic alignment of said liquid crystal material to give homeotropic alignment.

19. (Previously amended) A liquid crystal device comprising:
a first cell wall and a second cell wall enclosing a layer of liquid crystal material;
electrodes for applying an electric field across at least some of said liquid crystal material;
a surface alignment structure integrated onto an inner surface of at least said first cell wall providing a desired alignment to molecules of said liquid crystal material,
wherein said surface alignment structure comprises one of a random or pseudorandom two dimensional array of upstanding features that are at least one of shaped and orientated to produce said desired alignment, and
wherein said molecules, when adjacent to said cell wall surface between said features, adopt an alignment which is one of planar and tilted planar.

20. (New) A liquid crystal device as claimed in claim 1, wherein said features comprise a plurality of separate and distinct upstanding features.


21. (New) A liquid crystal device as claimed in claim 1, wherein said array of upstanding features is not treated with or formed from a material which will induce local homeotropic alignment of said liquid crystal material.

22. (New) A liquid crystal device comprising:
a first cell wall and a second cell wall enclosing a layer of liquid crystal material;
electrodes for applying an electric field across at least some of said liquid crystal material, said electrodes comprising at least a first electrode structure on an inner surface of said first cell wall; and
a surface alignment structure on said inner surface of said first cell wall and on said first electrode structure, providing a desired alignment to molecules of said liquid crystal material,
wherein said surface alignment structure comprises one of a random or pseudorandom two dimensional array of upstanding features that are at least one of shaped and orientated to produce said desired alignment.

23. (New) A liquid crystal device comprising:
a first cell wall and a second cell wall enclosing a layer of liquid crystal material;
electrodes for applying an electric field across at least some of said liquid crystal material; and
a surface alignment structure on said inner surface of said first cell wall providing a desired alignment to molecules of said liquid crystal material,
wherein said surface alignment structure comprises one of a random or pseudorandom two dimensional array of upstanding features that are at least one of shaped and orientated to produce said desired

alignment, said features having different sizes in different regions of said first cell wall.

24. (New) A liquid crystal device comprising:
a first cell wall and a second cell wall enclosing a layer of liquid crystal material;
electrodes for applying an electric field across at least some of said liquid crystal material; and
a surface alignment structure on said inner surface of said first cell wall providing a desired alignment to molecules of said liquid crystal material,
wherein said surface alignment structure comprises one of a random or pseudorandom two dimensional array of upstanding features that are at least one of shaped and orientated to produce said desired alignment, and wherein said features have different shapes in different regions of said first cell wall.



25. (New) A liquid crystal device comprising:
a first cell wall and a second cell wall enclosing a layer of liquid crystal material;
electrodes for applying an electric field across at least some of said liquid crystal material; and
a surface alignment structure on said inner surface of said first cell wall providing a desired alignment to molecules of said liquid crystal material,
wherein said surface alignment structure comprises one of a random or pseudorandom two dimensional array of upstanding features that are at least one of shaped and orientated to produce said desired alignment, and
wherein said features have different tilt angles in different regions of said first cell wall.

26. (New) A liquid crystal device comprising:
a first cell wall and a second cell wall enclosing a layer of liquid crystal material;
electrodes for applying an electric field across at least some of said liquid crystal material; and
a surface alignment structure on said inner surface of said first cell wall providing a desired alignment to molecules of said liquid crystal material,
wherein said surface alignment structure comprises one of a random or pseudorandom two dimensional array of upstanding features that are at least one of shaped and orientated to produce said desired alignment, and
wherein said features have different orientations in different regions of said first cell wall.

27. (New) A liquid crystal device comprising:
a first cell wall and a second cell wall enclosing a layer of liquid crystal material;
electrodes for applying an electric field across at least some of said liquid crystal material; and
a surface alignment structure on said inner surface of said first cell wall providing a desired alignment to molecules of said liquid crystal material,
wherein said surface alignment structure comprises one of a random or pseudorandom two dimensional array of upstanding features that are at least one of shaped and orientated to produce said desired alignment, each of said features having the same shape and wherein said features are randomly orientated.

28. (New) A liquid crystal device comprising:

a first cell wall and a second cell wall enclosing a layer of liquid crystal material;

electrodes for applying an electric field across at least some of said liquid crystal material; and

a surface alignment structure on said inner surface of said first cell wall providing a desired alignment to molecules of said liquid crystal material,

wherein said surface alignment structure comprises one of a random or pseudorandom two dimensional array of upstanding features that are at least one of shaped and orientated to produce said desired alignment, and

wherein said features have a plurality of shapes and a plurality of sizes.

29. (New) A liquid crystal device as claimed in claim 24, wherein said features have different orientations in different regions of said first cell wall.